

Zion

Fire & Aviation Management

National Park Service
U.S. Department of the Interior



Annual Report 2006



Kolob Wildland Fire

2006 Season Overview

The 2006 season was a very busy one for Zion National Park's Fire and Aviation Management Program and its staff of 41 people (both seasonal and permanent). Nationally, it was another record year with over 9.5 million acres burned.

Zion was in severity fire funding for much of the season and fire restrictions were once again enacted for the fourth year in a row. Additional staffing was brought in from various agencies including NPS, BLM, and FS to support the local fire severity and ongoing wildland fires.

Zion had 24 wildland fires in 2006 that burned 10,792 acres within the park. This included the Kolob Fire, the largest in the park's history at 10,516 acres (17,000+ acres total). Zion was also involved in numerous wildland and prescribed fire support actions within the Color Country Interagency Fire Management Area and throughout the country.

Zion once again assisted with the fire management programs of its seven cluster parks (BRCA, PISP, TICA, GOSP, CEBR, GLCA, and CARE). Zion supported all fire management activities in these parks including prescribed fire in BRCA and hazardous fuel reduction (mowing) at GOSP. Zion also provided technical expertise for planned fuel treatment projects at GOSP.

Zion continues its tradition of interagency cooperation as a member of the Color Country Interagency Fire Management Area whose response zone covers 14.7 million acres of federal, state and private lands in Southwest Utah and Northwest Arizona. This group helps to promote safe and effective fire management in Color Country through interagency cooperation and coordination. Zion representatives served as the Chairperson on the Operations, Fuels and Information/Education Committees. The area had another busy wildland fire season running from April to late September with 878 fires reported totaling 193,703 acres burned. The area also hosted seven Incident Management Teams during the fire season.

Jan Passek, Zion's Fire Management Officer since 2001, moved on to a job in Alaska in November. Her leadership and friendship will be missed by all those who worked with her. Deirdre Hanners was welcomed into Zion's fire management family in March as our new Fire Program Management Assistant. Shane Paxton came back to Zion as the Lead Crewmember on the Fire Use Module. Greg Bartin transferred from the Zion Fire Use Module to Engine Supervisor in Zion Canyon.

2006 Season Highlights

- Management of 24 wildland fires within the park totaling 10,792 acres (including one Fire Use Fire, .3 acre)
- Hiring of three permanent fire management positions including Fire Program Management Assistant, Engine Boss and FUM Lead Crewmember
- Assisted with 118 fires outside the park
- 11 fuel treatments involving 2,210 acres in the park, including the 1,800 acre East Mesa Rx.
- Continued development of Zion Fire Management webpage (www.nps.gov/Fire/Index.htm)
- Assistance with the production of County Wide Community Fire Plans and assistance with other communities in the planning phase
- Continued to use local contract crews, where feasible, for fuels treatment projects
- Fire restrictions were in effect for fifth year in a row 5/26 – 9/29
- Received severity funding for additional staffing from June 25 through July 24.
- The Zion Fire Use Module participated in over 142 operational shifts.
- Zion Helitack Module flew approximately 327 hours in support of fire and other operations throughout Color Country
- Participated in an interdisciplinary Joint Fire Science Project in Zion Canyon to assess what types of management treatments can help to control the spread of exotics.
- Along with resource management, continued a forest management program to reduce hazardous fuels and provide for the restoration of aspen at Lava Point
- The Zion Fire Use Module's Crew Truck was destroyed by fire while assigned to a prescribed fire on the Gila NF. The incident is still under investigation.
- A BAER Team (Burned Area Emergency Response) was brought in to deal with the impacts from the Kolob Wildland Fire. This included the production of an Environmental Assessment and the subsequent Finding of No Significant Impact for a 10,000 acre aerial herbicide spraying project on the burned area to reduce the invasion of exotics.



Fire Refresher Training - Sand table exercise

Kolob Wildland Fire

The Kolob Wildland Fire started in Zion National Park on June 24, 2006. It burned a total of 17,632 acres of which 10,516 acres were in the park. This human-caused fire was the largest in Zion National Park's recorded history and altered the landscape on a scale that was unprecedented. A Type II Incident Management team was brought in to manage the fire. It was declared contained on June 30. A Burned Area Emergency Rehabilitation Team (BAER) was brought in to assess damage and make recommendations. These included erosion control in critical areas, replacement of burned boundary fence, use of herbicide to prevent large-scale establishment of cheatgrass, reestablish native plant species through seeding and monitoring of treatment effectiveness.

The main concern the park has in the aftermath of the Kolob Fire is the invasion of non-native cheatgrass in the burned area. Cheatgrass (*Bromus tectorum*) was accidentally introduced to the United States during the 1890s and has invaded millions of acres of land in the west causing vast environmental and economic impacts. Cheatgrass expansion has dramatically changed fire cycles and plant and animal communities by creating an environment where fires are easily ignited, spread rapidly, cover large areas and occur frequently. The result is a conversion from native shrub and perennial grasslands to annual grasslands adapted to frequent fires.



Aerial view of Kolob Fire

Zion is currently in the process of a three year study funded by the Interagency Joint Fire Science Program to evaluate how they can best eradicate non-native grasses and establish native species in their place, as well as to reduce hazardous fine fuels created by the non-natives. The study included treatments of mowing, prescribed fire, herbicide application and sowing of native seeds. Preliminary results from this study in Zion Canyon indicate that the use of PLATEAU herbicide in the fall is the most effective treatment for controlling cheatgrass germination. This highly selective herbicide targets many of Zion's invasive, non-native species including cheatgrass.

Park managers decided to address the Kolob Fire rehabilitation/cheatgrass issue with the aerial application of PLATEAU herbicide to affected lands. An Environmental Assessment was prepared and a Finding of No Significant Impact completed over an eight week period soon after the BAER Team's recommendations were received and after park, regional and national approval of the document. A strict deadline was necessary because the herbicide application needed to be accomplished before cheatgrass had a chance to establish post fire.

Beginning on October 29 a private contractor began the aerial application of PLATEAU herbicide on affected park lands using of two Bell Jet Ranger helicopters with a Simplex Spray System. This state of the art spray system was used to create an optimal droplet size to minimize drift and maximize herbicide effectiveness. A Global Positioning System (GPS)/Geographic Information System (GIS) was used to navigate and maintain uniform application rates. In addition, a “real-time” moving map display showed areas to be treated, areas that had been treated and non-target areas. Flight paths were recorded for project compliance and records. The helicopter was also equipped with an automatic shutoff device that triggered whenever the aircraft was outside of the designated treatment area, eliminating any potential pilot error. This phase of the project was completed on November 16.

In conjunction with the application of herbicide, native seed was also applied over 493 acres of a portion of the pinyon-juniper community burned area that was heavily infested with cheatgrass prior to the burn. It is hoped that this native seed will have a chance to become established before cheatgrass does.

To measure the projects effectiveness, a number of monitoring plots were established throughout the burned area that will be evaluated over a three year period. These plots are located in areas that received herbicide only and areas that received both herbicide and native seed. These monitoring plots will be evaluated over a three year period by staff and students from Northern Arizona University under a cooperative Ecosystems Studies Unit Agreement.



Resource advisors viewing the burned area



Sign damage from the Kolob Fire



Aerial application of herbicide



Aerial application of native seed

Fire Effects Monitoring Program 2006

It has been yet another season of change for the Southern Utah Group Fire Effects Monitoring Program. Lead Monitor Claire Crow continued work on her Masters degree at the University of Arizona. She will return in December as the Wildlife Biologist for Zion NP. Acting Lead Alina Cansler accepted the Lead Monitor position at North Cascades National Park and Katie Johnson stepped up from crewmember to the Lead position. The program will benefit from having a crewmember on nearly year-round to clean up loose ends and to work on much needed fire GIS and fire effects plot history projects.



Zion Fire Effects Crew 2006

Although all field data entry was completed in the DOS based Fire Monitoring Handbook (FMH) program, all data was converted for the final time into the newer Windows based Fire Ecology Assessment Tool (FEAT 2.4). Data analysis will be feasible in FEAT after all data is organized and cleaned up, which will require a heavy time commitment. This data will go through yet another transition at the end of 2007 into a program based on the integration of FEAT and FIREMON, a fire monitoring program used primarily by the Forest Service. Another accomplishment from this season was the identification of three years worth of unknown plants by Walt Fertig of the NPS Northern Colorado Plateau Inventory and Monitoring program out of Moab and Dr. James Bowns from Southern Utah University. This greatly assisted the program with data management.

This field season saw a majority of work at Bryce Canyon with twice as many post burn plot reads as were at Zion. Crewmembers also traveled to Golden Spike for a short stint to install one and read two plots. Altogether, the crew read 45 plots and reproduced 6 photo points in three park units.

Three crewmembers assisted the Zion engine and fuels crew with severity coverage and with fires in and around the park. Members of the fire effects crew participated in a Color Country Interagency handcrew, a Zion Helitack detail, the East Mesa prescribed fire, several wildfires and a fire use fire within the park. Crewmembers initiated and completed FFT1 and FEMO taskbooks as well as completed 5 NWCG training courses.

The Kolob Fire in June/July, which burned over 10,000 acres of climax pinyon/juniper community in Zion National Park kept the Fire Ecologist busy as the Resource Advisor for the fire. The 10 day ordeal involved briefing the Incident Command Team and field crews, coordinating with other ZNP field resource advisors, consulting on suppression actions, and post fire rehab planning. A NPS Intermountain Region BAER team was called in on July 16th to assess the natural and cultural resource damage and make recommendations to the park for rehab actions. As soon as the BAER team departed, the task of implementing recommendations and coordinating contracts began. When selected rehab actions were completed in November, 3.7 miles of fence were replaced, 493 acres were aerially seeded and herbicide was aerially applied to over 8000 acres of the park. This application of herbicide is the largest in NPS history and was accomplished to prevent the conversion of the juniper/pinyon community to an annual exotic grass (*Bromus tectorum*). This treatment will be followed up with 3 years of monitoring to determine its effectiveness. The Fire Ecologist also served as the Acting Chief of Resources beginning in November.

Park	Monitoring Type	Type of Plot	Install & Pre-burn	Pre- and Re Pre-burn	Imm. Post	Post burn (1, 2, 5, 10 yrs)	Total Plots
Zion	Great Basin Sage Brush	FMH Brush	0	0	0	1	1
	Pinyon / Juniper	FMH Forest	0	0	2	3	5
	Ponderosa Pine	FMH Forest	0	0	4	5	9
	Ponderosa Pine	Photo Point	3	0	3	0	6
	Gambel Oak	FMH Forest	0	0	0	2	2
	Rare plants	Modified FMH Brush	0	0	0	3	3
	Column SubTotals		3	0	9	14	26
Bryce Canyon	Black Sagebrush	FMH Brush	0	0	0	2	2
	Ponderosa Pine	FMH Forest	0	4	0	13	17
	Mixed Conifer	FMH Forest	0	2	0	1 (control)	3
	Column SubTotals		0	6	0	16	22
Golden Spike	Sage Brush	FMH Brush	1	0	0	2	3
Total			4	6	9	32	51

Fire Information and Education 2006

The Fire Information and Education program at Zion is coordinated by the Fire Information and Education Specialist (FIES) whose primary responsibility is to establish and coordinate internal and external fire information, education and prevention programs in order to present an integrated interdisciplinary fire program within Zion (and the other Utah cluster parks) and the National Park Service (NPS) as a whole.

2006 was another busy year for the Information and Education portion of Zion's Fire Management Program. The park experienced 24 wildland fires that burned 10,792 acres including the Kolob Fire, the largest in the park's history. The FIES served as Information Officer (IOF), either directly or indirectly, on all these incidents. The incidents required the production and dissemination of fire information, both internally and externally, and in a variety of mediums, including press releases, media interviews, park memos, posters and webpages.



Junior Ranger fire program in parks Nature Center

The FIES produced numerous fire-related brochures, posters, handouts, site bulletins, and other information for Zion, the NPS and Color Country. The messages were delivered in an assortment of mediums, both directly and indirectly, and by a wide variety of individuals, including the FIES, fire staff, park interpreters, resource management staff, and IOFs assisting the FIES. The FIES was also involved in the training of seasonal park employees and concession staffs in regards to fire management.

One of the major duties of the FIES is the updating and continued development of the wildland fire webpage (www.nps.gov/zion/Fire/Index.htm), which is hosted by Zion's main webpage. The site contains a wealth of information regarding wildland fire management in Zion and the NPS.

The FIES is a qualified PIO1 trainee and is currently serving in that function on a Type I Incident Management Team that manages wildland fires throughout the country. The FIES also served as a PIO on numerous wildland and prescribed fires in the Color Country area and served on a detail to Bandelier National Monument to help them prepare for a planned prescribed fire. All of these fire events, especially the prescribed burns, depended heavily upon the timely and accurate dissemination of information to the public, staff and media.

The FIES serves as the NPS representative and Chairperson for the Color Country Interagency Information and Education Committee, an active group that produces and disseminates wildland fire-related information and educational materials/programs. This committee is part of a larger group known as the Color Country Interagency Fire Management Area that coordinates fire management activities throughout Southwestern Utah and northwestern Arizona.

The FIES also represents the NPS on two other interagency committees including, the Great Basin Fire Education and Prevention Committee and the Utah Fire Communications Committee.

As well as the FIES duties in the Fire Management Program, the position also assists with the Public Information Program in the park. This involves the production of numerous press releases, media interviews, a park profile, co-managing the park's website and being a member of various park committees and work groups.

Following is a list of specific fire-related information/education activities for both Zion and associated national parks and the Color Country Interagency Fire Management Area. There are no exact figures for the number of people contacted in 2006 concerning non-personal fire-related messages, but it certainly numbered in the thousands.

Zion and other NPS Cluster Parks 2006

Information/Education Activity	Staff	Efforts	Contacts
Personal			
Fire Ecology Class	FIES	1	9
Kids Fire program	Interpretation	10	190
Evening Program (Fire)	Interpretation	31	2325
Earth Day Booth	FIES, staff	1	840
Informal roving during fire activities	FIES, staff	8	600+
Community Fire Meetings	FIES, staff	3	200+
Zion Staff Training	FIES, staff	5	75
Non-personal			
Fire Webpage	FIES	on-going	-
Success Stories	FIES	5	-
NPS Fire Reporting	FIES	5	-
Fire Press Releases	FIES	10	-
Fire Posters	FIES	11	-
Fire Restriction Newspaper Ads	FEIS	1	-
Bulletin Boards in Zion	FEIS	25	-
KCSG-TV Interview (Season outlook)	FEIS	1	-
Spectrum Newspaper Articles (Fire)	FEIS	6	-

Zion Fire Use Module 2006

The 2006 fire season brought new challenges to the Fire Use Module (FUM). The crew hit the ground running in the spring helping the Mid-West Region on a 20 day burn detail. The crew assisted with prescribed burns on BIA, USFWS, NPS, TNC and private property. The BIA and NPS burns took place in Kansas and Iowa, both of which represented firsts for the Zion FUM. We also hosted the first of its kind GIS and GPS training. Several FUMs from across the country came to participate in this week long training.

Our first fire use assignment of the season came in early June on the Wilson WFU on the Gila NF in New Mexico. On the 2nd day of the assignment, the “crew rig” burned to the ground. No module members were present. Several days were spent documenting events and possessions, working with the investigation team and counting our losses. A number of important lessons were learned from the truck fire, and the crew used this experience to put on a “Lessons Learned” presentation for the Color Country Interagency Fire Center.

However, the loss of our crew rig did not slow us down. The crew was only down for one week and was resupplied and received a loaner truck from the Great Smoky Mountains FUM and was back in the field. The crew worked the rest of the season spending time at; Kaibab NF, El Malpais NM, Grand Canyon NP, Crater Lake NP, Bryce Canyon NP, Zion NP, Arizona Strip BLM, Bandelier NM, Capulin Volcano NM and Bent’s Old Fort NHS.

This season was a year of challenges for the Zion FUM, but even with the hardships the crew rose above and continued to produce the same high level of work and products that this crew has been known for.

2006 Work Summary

TASK	Person Days Worked	2006	Average (96-05)
Wildland Fire: Suppression	144	13.7%	12.1%
Prescribed Fire: Execution	87	8.3%	13.3%
Travel	205.5	19.6%	11.3%
Module Operations	225	21.4%	11.9%
Wildland Fire Use	261	24.8%	28.1%
Training	54	5.1%	8.5%
Prescribed Fire: Preparation	53.5	5.1%	7.6%
Hazard Fuels	19	1.8%	4.6%
Prescribed Fire: Planning	0	0.0%	0.6%
Fire Effects Plot Work	2	0.2%	1.4%
TOTAL	1051		

	Assignments	Acres
Wildland Fire: Fire Use	6	27,228
Wildland Fire: Suppression	4	57,650
Prescribed Fire: Execution	15	3,200
Prescribed Fire: Preparation	5	50 chains
Hazard Fuels	2	5

Zion Helitack Module 2006

Once again it has been a long and yet rewarding year for Zion Helitack. We were without our complete compliment of managers this season due to one of our lead's moving on and physical ailments amongst other crewmembers. This required that we detail various Helicopter Manager's for most of the season; luckily most of our support came from Yellowstone National Park (66 days of our contract) and the Boise Smokejumpers and Montrose BLM.

Due to Color Country Dispatch utilizing a run card system our flight time and responding to fires as an initial attack force increased. We flew a total of 327 hours responding to multiple Search and Rescue's, initial attacked over 35 fires, supported over 15 large fires, went off district three times, supported a couple prescribed fires and several projects.



2006 Zion Helitack Contract Helicopter

Zion Helitack had a compliment of 10 crewmembers and at various times was supported by 12 detailers this summer. This year we assisted with the largest fire in Zion National Park's history. The Kolob Fire consumed much of our time in late June. One again this season we saw a need to have a rappel ship stationed somewhere in Color Country, we continue to look at this as a possibility with management.

Agency	Flight Time	Passengers	Internal Cargo	External Cargo	Water Delivered
N.P.S.	99.3 hrs	346	23,415 lbs	36,050 lbs	17,487 gallons
B.L.M.	155.9	492	34,378	6,198	65,210
F.S.	43.5	235	13,518	1,480	9,164
State	21.5	60	5,165	16,345	15,712
BIA	2.9	8	1,400	0	660
GSNM	3.8	9	730	1,600	264
Totals	326.9 hrs	1,150	78,606 lbs	61,673 lbs	108,497 gallons

Initial Attacks	36
Fires Supported	43
Off District	2
SAR's	3
Prescribed Fire	2
Projects	5

Fuels Treatment Projects 2006

Project	Treatment Type	Acres
Campground Leaf Burning	Broadcast Burn	17
East Entrance Burn Piles	Pile Burn	2
East Mesa Line Prep	Mechanical	7
East Mesa Rx (North Unit)	Broadcast Burn	1835
Joint Fire Science Project	Broadcast Burn	13
Kolob VC Cut and Pile	Mechanical	24
Zion Canyon Mowing	Mechanical	35
Oak Creek Housing	Mechanical	116
Roaring Twenties	Mechanical	40
Rockville Bench Fuel Break	Mechanical	11
Zion Lodge Fuel Reduction	Mechanical	110
		2210

Communities Protected

- East Zion - (Focus Area of the Color Country Interagency Fire Management Area)
Little Ponderosa Subdivision
Zion Estates
- Kolob - (Focus Area of the Color Country Interagency Fire Management Area)
- Zion National Park Infrastructures



East Mesa Prescribed Fire



Fuel reduction in Oak Creek Housing area

Zion NP Wildland Fires – 2006

Fire Name	Date	Acres	Cause	Action Taken
Petroglyph	5/16	.3	Lightning	Fire Use
South 17	5/20	.1	Human	Suppression
Checkerboard	6/21	1.7	Human	Suppression
Kolob	6/24	10,516	Human	Suppression
Tower 2	6/30	17	Lightning	Suppression
Kolob Wash	7/6	.1	Lightning	Suppression
Telephone	7/6	.1	Lightning	Suppression
Sawmill	7/20	.1	Lightning	Suppression
Coal Pits	7/21	4	Lightning	Suppression
Jolly	7/22	.1	Lightning	Suppression
Mt. Majestic	7/23	249	Lightning	Confine/Contain
Virgin Flat	7/31	.1	Lightning	Suppression
Kidd	7/31	.1	Lightning	Suppression
Blue Spring	7/31	.1	Lightning	Suppression
Volcano	7/31	.1	Lightning	Suppression
Northgate	8/1	1.2	Lightning	Suppression
Leslie 1	8/23	.1	Lightning	Suppression
Leslie 2	8/23	.1	Lightning	Suppression
County	9/3	.1	Lightning	Suppression
Wylie	9/3	.1	Lightning	Suppression
Lamareaux	9/5	.2	Lightning	Suppression
Little Cat	9/15	.1	Lightning	Suppression
Helicat	9/15	.1	Lightning	Suppression
Dubay	10/5	.1	Lightning	Suppression
		10,792		

Out of Park Assignments

Support Assignments - **118** (Includes support in interagency wildland and prescribed fire activities)



Mt. Majestic Wildland Fire



Checkerboard Wildland Fire

2006 Zion Fire Business Management

Fire Management at Zion National Park is a highly complex program incorporating a full range of management objectives. The authorized funding in fiscal year 2006 was nearly \$2 million, including 9 FIREPRO base and 15 projects accounts. All fire related fiscal and administrative duties are accomplished by the Fire Program Management Assistant. The FMPA provides expertise in Incident Business Management to Zion as well as the 7 other parks in the Utah Group.

The FMPA processes all travel, payroll, personnel and procurement actions. The busy 2006 fire year resulted in the completion of over 300 travel vouchers. Each travel is complex and time consuming often allocating costs to several accounts. In addition, nearly 445 Requisitions were processed for the fire division as well.

FY 2006: Authorized Funding

FIREPRO	Authorized
Readiness	\$880,236
Fuels Management	\$466,241
Fire Effects Monitoring	\$113,231
Fuels Projects - Mechanical	\$57,700
WUI Program Management	\$231,789
WUI Projects - Prescribed Fire	\$124,700
WUI Projects - Mechanical	\$15,000
WUI Projects - Other	\$19,800
Total	\$1,908,697



Zion Fire and Aviation Management Staff 2006 (not all present)

Permanent Staff

Fire Management Officer - Jan Passek
 Assistant Fire Management Officer – Jeff Hickerson
 Fire Program Management Assistant – Deirdre Hanners
 Fire Ecologist – Kelly Fuhrmann
 Lead Fire Effects Monitor – Claire Crow/Katie Johnson
 Fire Information/Education Specialist – David Eaker
 Station Manager – James Courtright
 Engine Supervisor – David Brothwell
 Engine Supervisor - Greg Bartin

Helitack Module

Helitack Leader – Mike Reid
 Assistant Helitack Leader – Alicia Tanrath
 Crewmember - Curtis Ritzman

Fire Use Module

Module Leader – Ed Waldron
 Assistant Module Leader – Alex Viktora
 Lead Crewmember - Shane Paxton
 Crewmember – Travis Hartsburg
 Crewmember - Sarah Cooper

Bryce Canyon

Fuels Specialist - Bruce Fields
 Supervisory Forest Tech - Andrew Hostad

Seasonal Staff

Fire Program Management Clerk - Kari Berg
 Fire Effects Crew Lead - Alina Cansler
 Fire Effects Crew - Shannon Eberhard
 Engine Crew - Izzak McHenry
 Engine Crew - Mary Renzi
 Engine Crew - Jeff Brink
 Engine Crew - Ryan Cochrane
 Fuels Crew - Suri Card
 Fuels Crew - Sean Powell
 Fuels Crew - Tom Green
 Fuels Crew - Adam Rupe
 Fuels Crew - Travis Ford
 Fire Use Module - Kelly Boyd
 Fire Use Module - Holly Miller
 Helitack Module - Norman Allen
 Helitack Module - Danny Nielson
 Helitack Module - Andrea Castro
 Helitack Module - Paul Dameron
 Helitack Module - Kim Owczarzak
 Helitack Module - Doug Higgins (USFS)
 Helitack Module - Alexis Lewis (BLM)